

FIG. 1

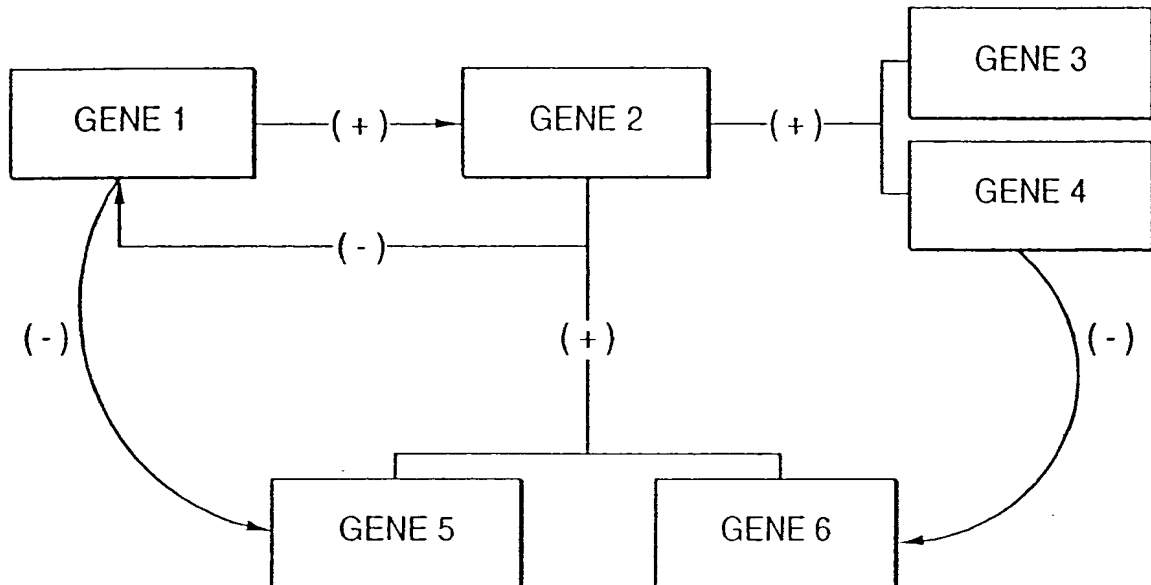


FIG. 2

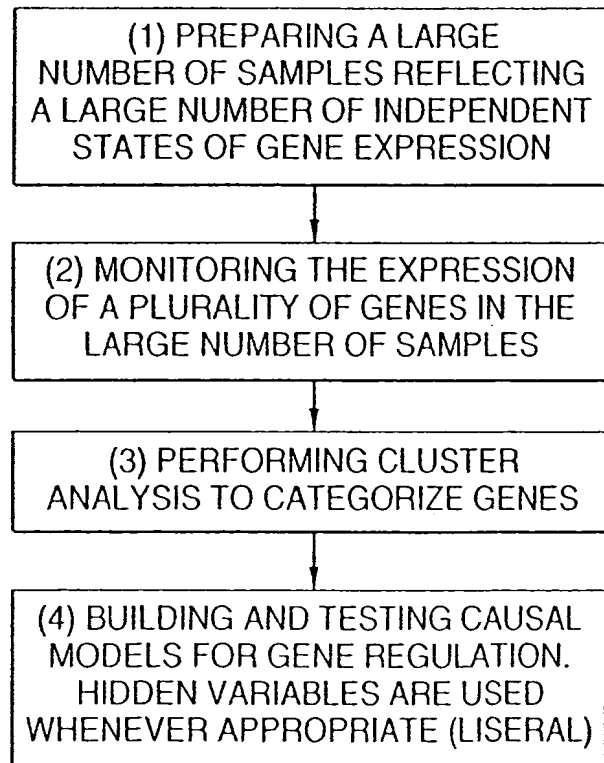


FIG. 3

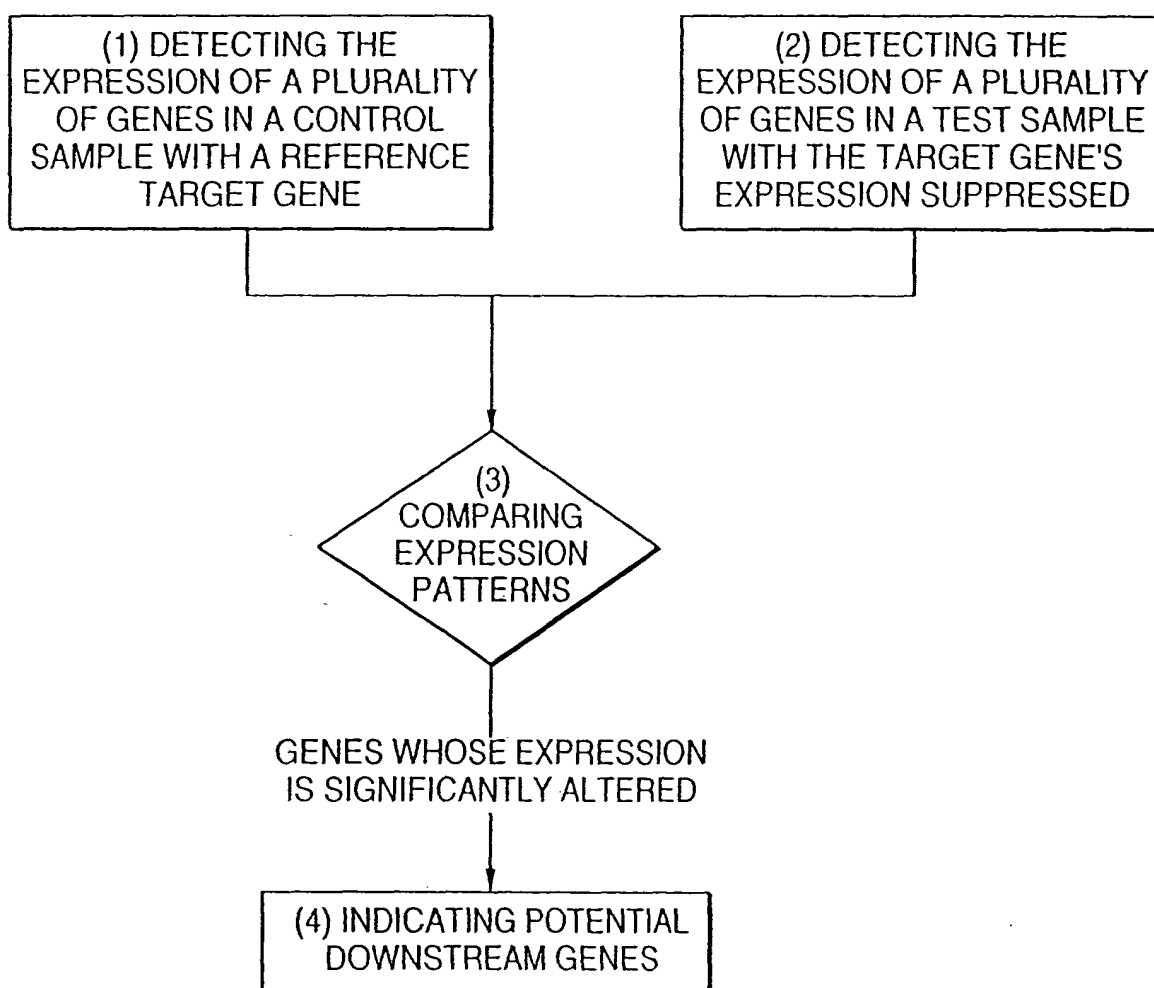


FIG. 4

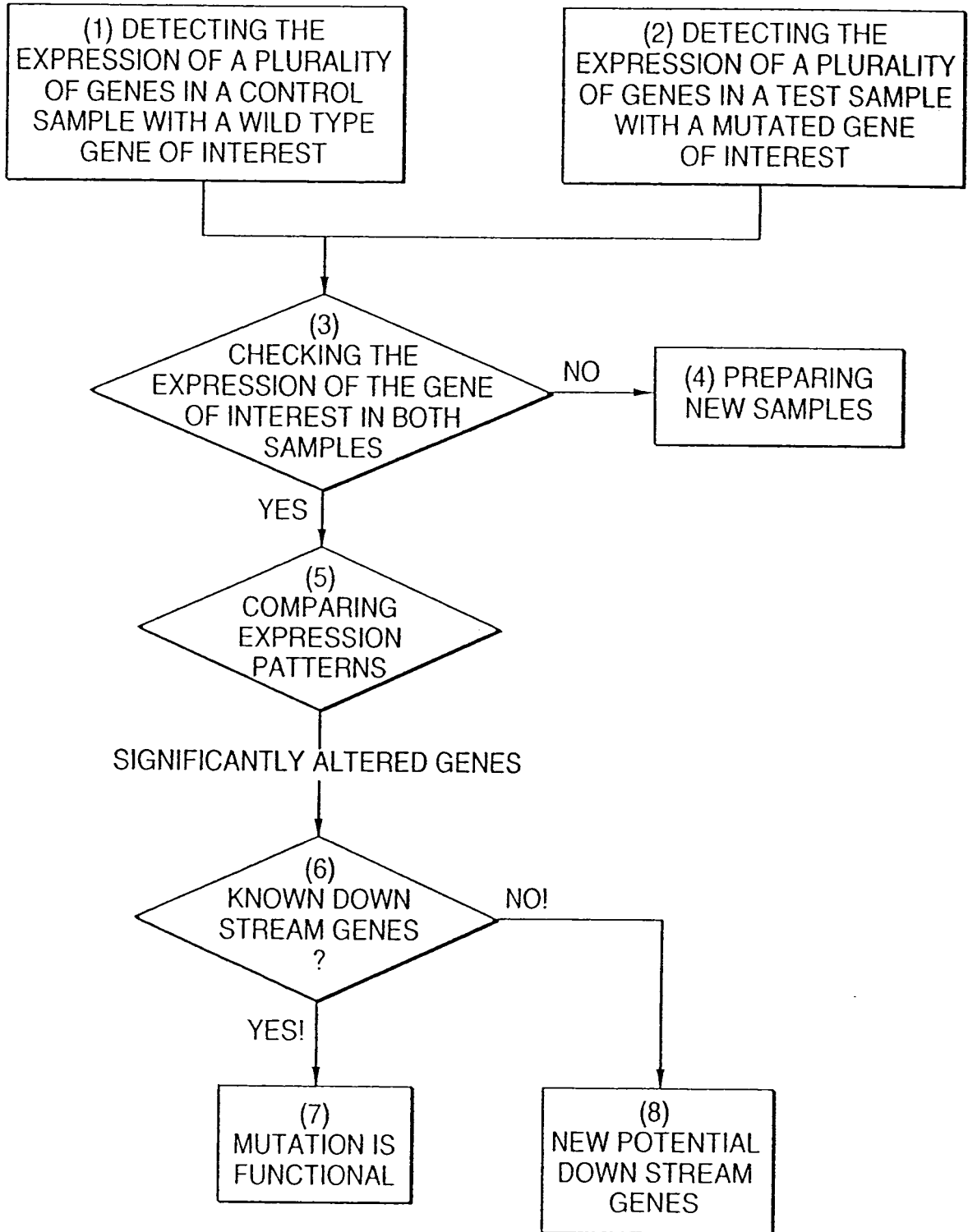


FIG. 5

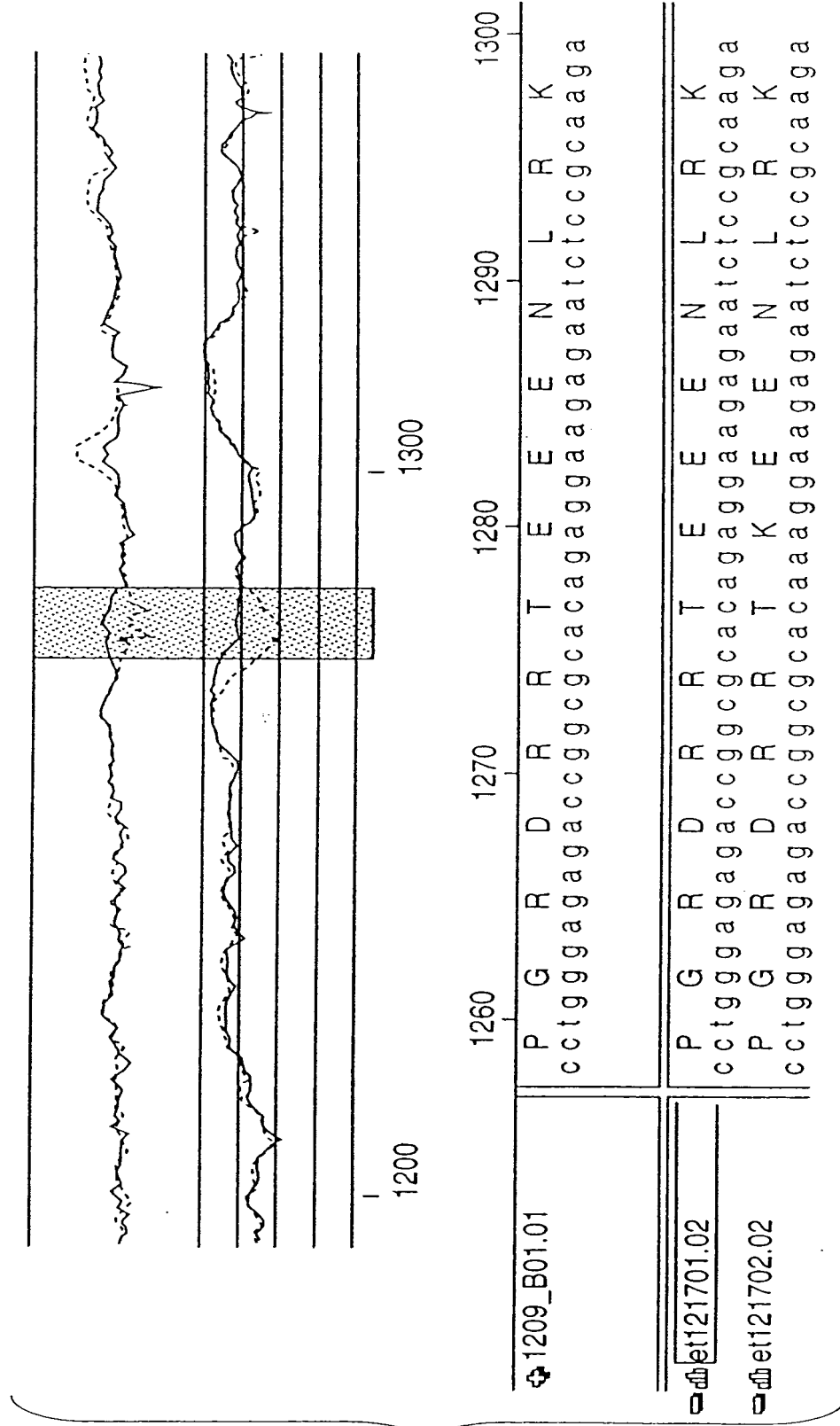


FIG. 6

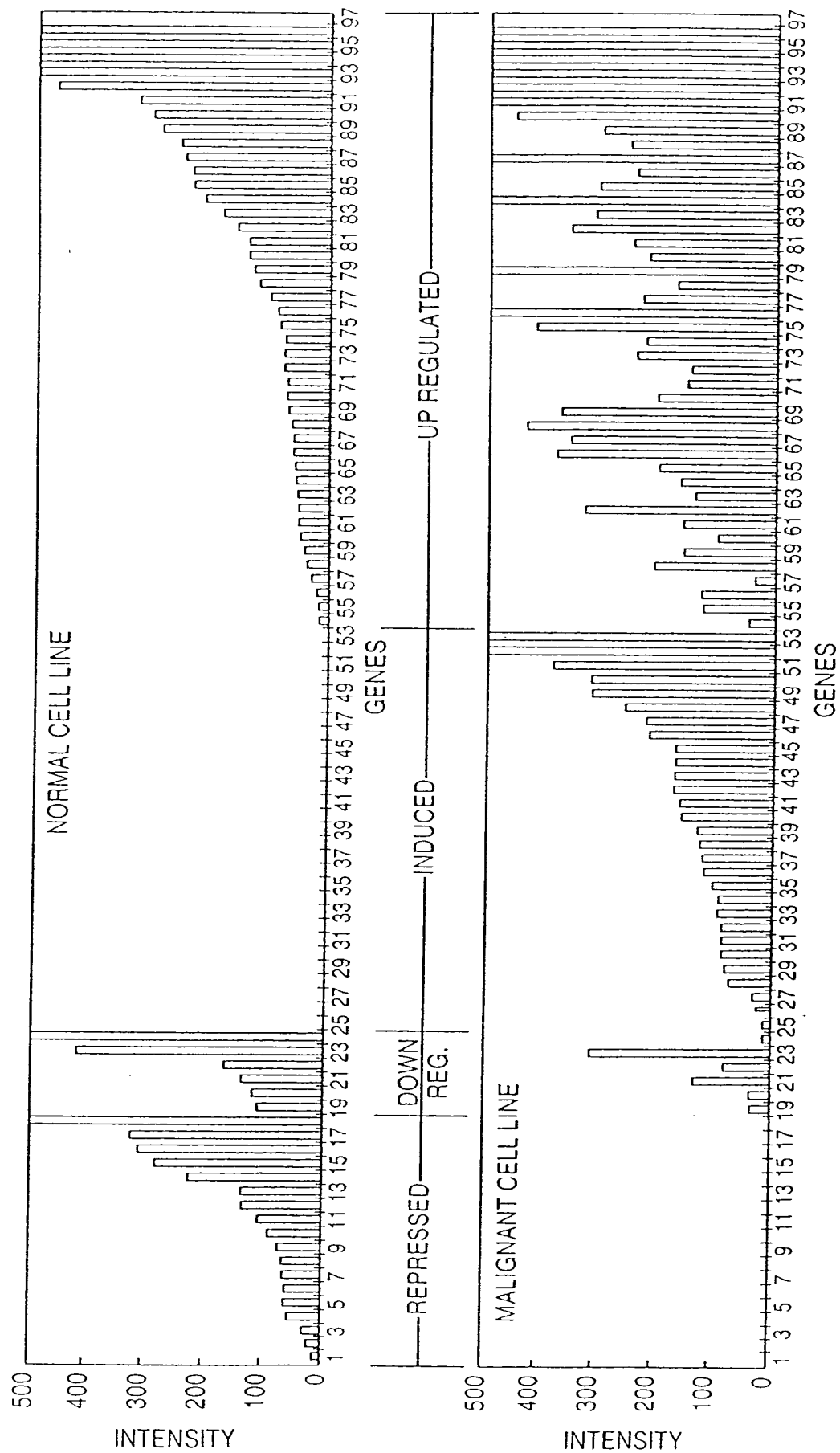


FIG. 7

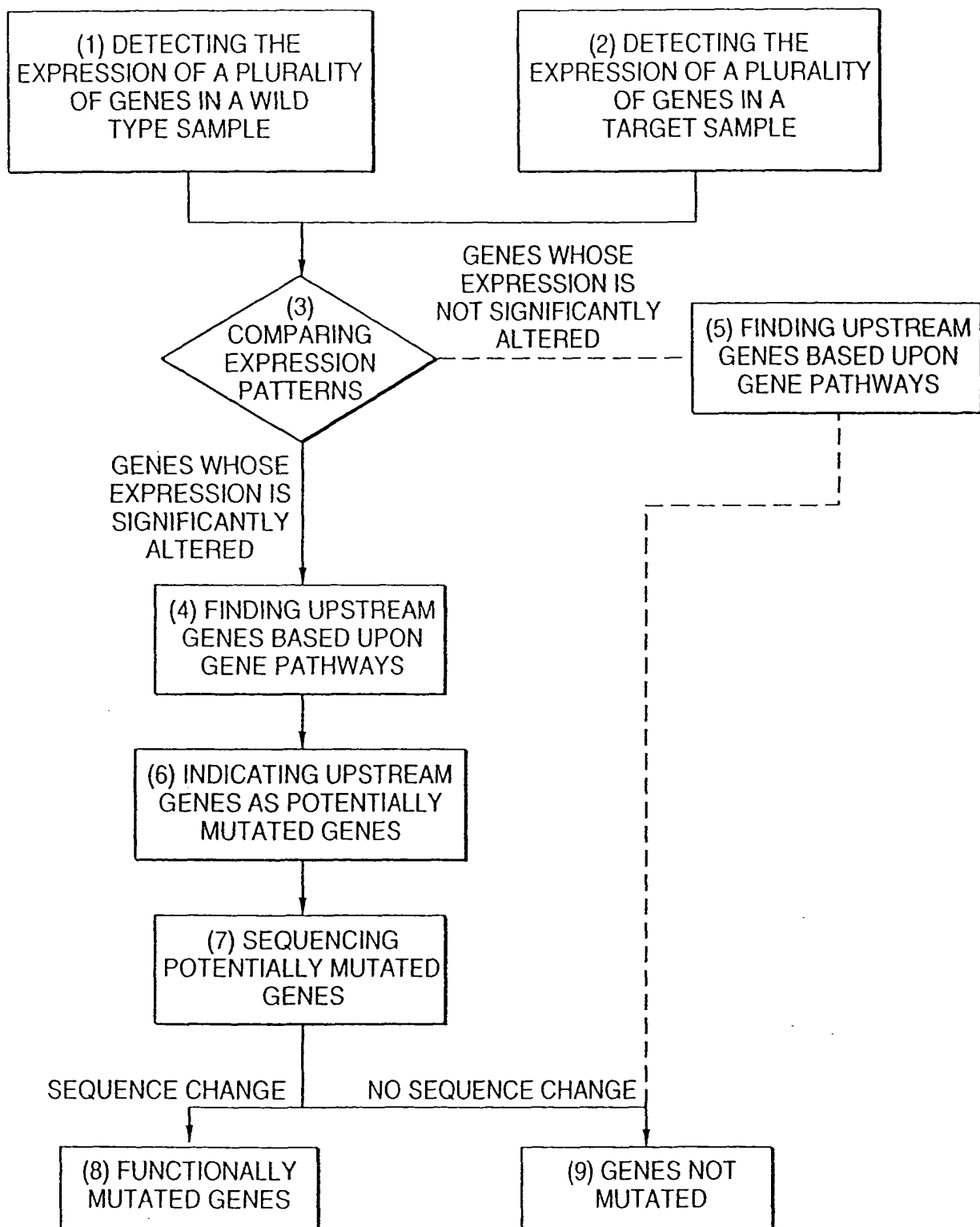


FIG. 8A

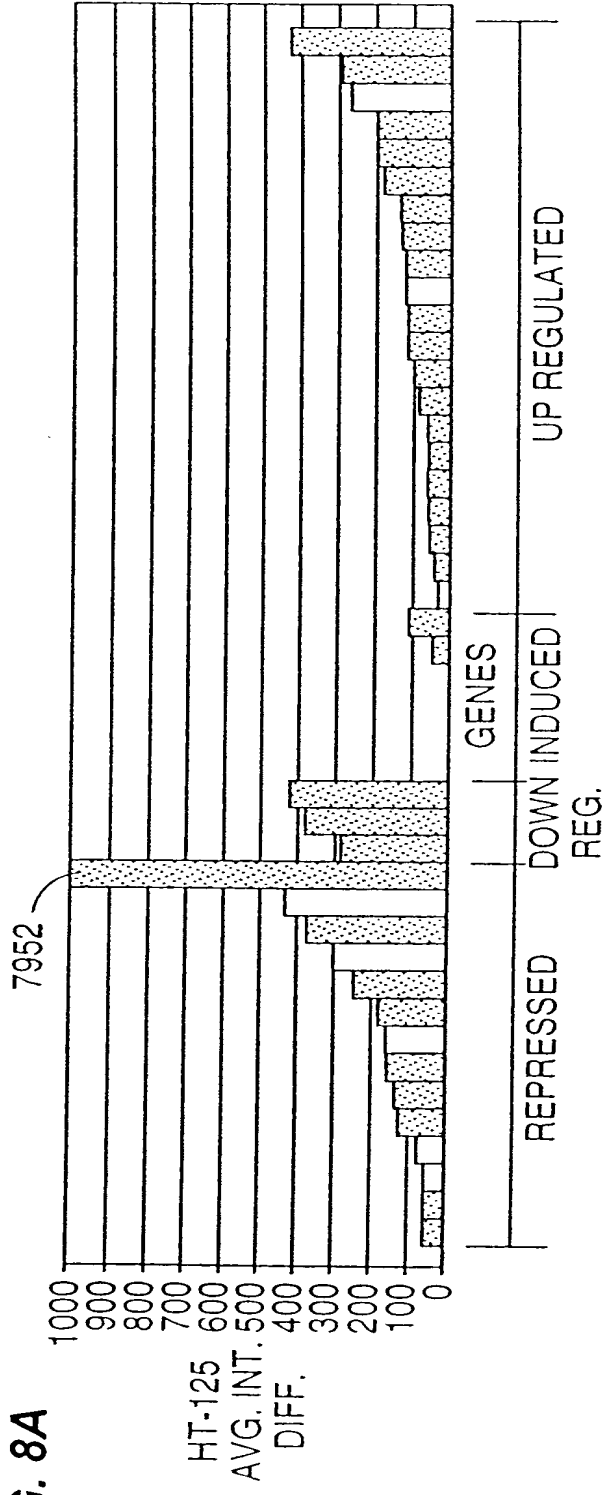


FIG. 8B

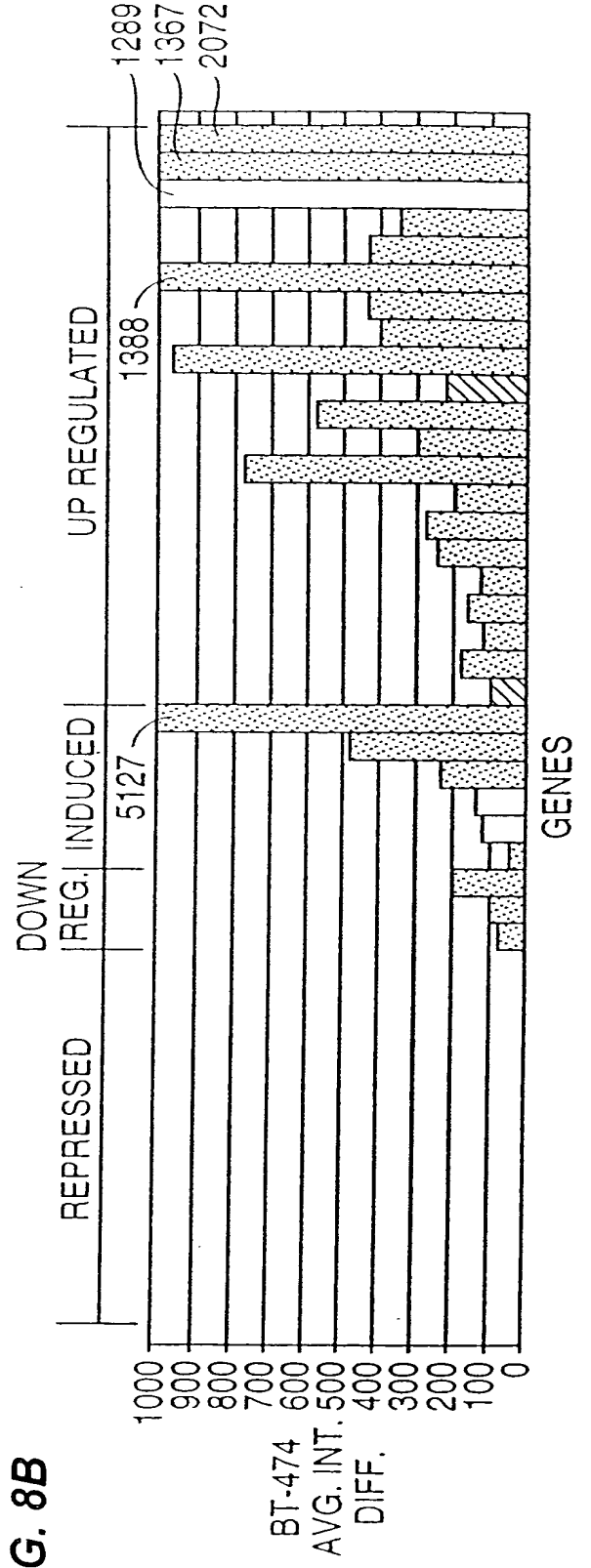


FIG. 9A

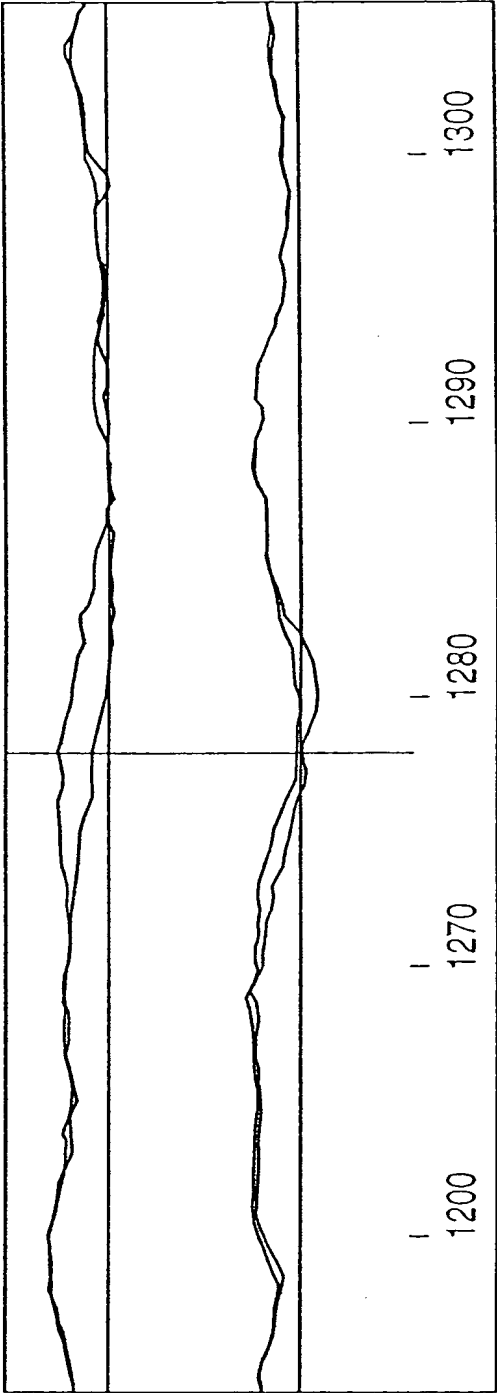


FIG. 9B

♣p53 ref.seq	P G R D R R T E E E N L R K cctggagagaccggcgacagaggagagaatctccgcaaga
♣wild-type.seq	P G R D R R T E E E N L R K cctggagagaccggcgacagaggagagaatctccgcaaga
♣BT-474.seq	P G R D R R T K E E N L R K cctggagagaccggcgacaaaggagagaatctccgcaaga

FIG. 10A

Table 3.

Genes transcriptionally induced in BT-474 vs HT-125

<u>Accession</u>	<u>Nominal copy number: 500~1,000 copie/cell</u>	<u>Functional category</u>
X00474	PS2 protein precursor	other
M1 1730	Her2/neu tyrosine kinase receptor	signal transduction
R1 0066	cDNA clone 128808 similar to Prohibitin	other
	<u>Nominal copy number: 100-500 copies/cell</u>	
J05068	Transcobalamin I	other
M22382	Mitochondrial matrix protein P1 precursor	mitochondrial
T54303	cDNA clone 69022 similar to Keratin, type II cytoskeletal 8	structural/cytoskeletal
L33930	CD24	signal transduction
T51499	cDNA clone 71494 similar to Succinate dehydrogenase	metabolic enz.
T70062	cDNA clone 80945 similar to NF45	transcription factor
X70940	Elongation factor 1 alpha-2	translational mach.
M88279	Human immunophilin	other
D45370	Adipose specific protein	other
H52207	cDNA clone 209710 similar to Matrix GLA-protein precursor	other
L08044	Intestinal trefoil factor	other
M31627	X Box binding protein-1	secr. gr. fact.
U37519	Aldehyde dehydrogenase	transcription factor
U39840	Hepatocyte nuclear factor-3 alpha	metabolic enz.
M26481	KS1/4 antigen	transcription factor
H09351	cDNA clone 46019 similar to MCM3 homolog	other
T51961	Proliferating cell nuclear antigen	DNA replication
T59162	cDNA clone 74635 similar to Selenium-binding protein	DNA replication
		other

FIG. 10B

<u>Nominal copy number: 50-100 copies/cell</u>	
T67986	cDNA clone 82030 similar to Clusterin precursor
U21931	Fructose-1,6-biphosphatase
Z13009	E-cadherin
M18216	Nonspecific crossreacting antigen
U31875	Hep27 protein
L02547	Cleavage stim.factor
R89566	cDNA clone 195338 similar to lamin B receptor
T98835	cDNA clone 122341 similar to 80.7 KD alpha trans-inducing protein
R00451	cDNA clone 123283 similar to Clathrin coat assembly protein AP47
M34309	Human epidermal growth factor receptor, HER3
X73424	Propionyl-CoA carboxylase beta chain
X89985	BCL7B
H00645	cDNA clone 149859 similar to Ribonuclease inhibitor
H41017	cDNA clone 192957 similar to Creatine kinase, ubiquitous mitochondrial precursor
R85558	cDNA clone 180221 similar to Inorganic pyrophosphatase
<u>Nominal copy number: 10-50 copies/cell</u>	
H41006	cDNA clone 177323 similar to Quinol oxidase polypeptide I
X51801	OP-1, osteogenic protein
M69238	Aryl hydrocarbon receptor nuclear translocator
X69392	Ribosomal protein L26.

cell ad./cell-cell comm.
metabolic enz.
cell ad./cell-cell comm.
other
other
translational mach.
other
other
other
signal transduction
metabolic enz.
other
other
mitochondrial
metabolic enz.

other
secr. gr. fact.
transcription factor
translational mach.

FIG. 10C

R88418	cDNA clone 166353 similar to Cleavage stimulation factor, 50 KD subunit	translational mach.
Y00815	Leukocyte antigen related protein	cell ad./cell-cell comm.
H41406	cDNA clone 192943 similar to mouse Gamma-adaptin	protein process.
X92814	HREV107-like protein.	other
X68194	h-Sp1	other
R42070	cDNA clone 30646 similar to Verprolin	structural/cytoskeletal
H19467	cDNA clone 172249 similar to Ankyrin R	other
R10620	cDNA clone 128901 similar to Tyrosine-protein kinase CSK	signal transduction
L29254	L-iditol-2 dehydrogenase gene	metabolic enz.
M34458	Lamin B1	other
R53942	cDNA clone 40026 similar to ADP,ATP carrier protein, heart/skeletal muscle isoform	other
T96666	cDNA clone 121357 similar to Cyclin-dependent kinase interactor 1	cell-cycle
R44863	cDNA clone 33477 similar to Phenylalkylamine binding protein	other
D43772	GRB-7	signal transduction
X67334	BM28	DNA replication
T78606	cDNA clone 113492 similar to Translational activator GCN1	translational mach.
D42047	KIA0089 Human mRNA gene for Mouse glycerophosphate dehydrogenase-related	metabolic enz.
X58072	hGATA3	transcription factor
M34344	Platelet glycoprotein IIb	cell ad./cell-cell comm.
R46731	cDNA clone 36517 similar to Transcriptional regulatory protein RPD3	transcriptional mach.
U33819	Zinc-finger DNA binding protein	transcription factor
R23246	cDNA clone 131094 similar to Goliath protein	other
H64489	cDNA clone 238846 similar to Leukocyte antigen CD3	cell ad./cell-cell comm.
T47377	cDNA clone 571035 similar to S-100P protein	other

FIG. 10D

H05814	cDna clone 44151 similar to Putative ATP-dependent RNA helicase	translational mach.
X83618	3-hydroxy-3-methylglutaryl coenzyme A synthase	metabolic enz.
U14550	Sialyltransferase SThM	metabolic enz.
R55185	cDNA clone 154654 similar to Galactoside 3(4)-L-fucosyltransferase	metabolic enz.
V00568	C-myc	transcription factor
L47738	Inducible protien	other
M20560	Lipocortin-III	other
T47964	cDNA clone 71549 similar to Purine nucleoside phosphorylase	metabolic enz.
T90192	cDna clone 110564 similar to DNA-binding protein MEL-18	transcription factor
U20285	GPS1	signal transduction
M81637	Grancalcin	other
H19201	cDna clone 508873 similar to Guanine nucleotide diss. stim.	signal transduction
X03635	Oestrogen receptor	transcription factor
X52426	Cytokeratin 13	structural/cytoskeletal
R37799	cDNA clone 270833 similar to Protein phosphatase PP2A	signal transduction
X03484	Raf oncogene	signal transduction
L11284	ERK activator kinase, MEK1	signal transduction
X70683	SOX-4	transcription factor
R72644	cDNA clone 156489 3' similar to Choline kinase	other
M97370	Adenosine receptor (A2)	signal transduction
X76180	Lung amiloride sensitive Na ⁺ channel protein	cell ad./cell-cell comm.
R45583	cDNA clone 35271 similar to NG-CAM related cell adhesion molecule	cell ad./cell-cell comm.
M13665	C-myb	transcription factor
D26018	Human mRNA (KIAA0039) for ORF	other
H54752	cDna clone 203275 similar to Activator 1 37 KD subunit	other
H04239	cDna clone 151776 similar to Developmental protein seven in absentia	signal transduction

FIG. 10E

D21852	Human mRNA (KIAA0029) for ORF	other
M57730	Immediate early response protein B61 precursor	secr. gr. fact.
M16768	Human T-cell receptor gamma chain VJCI-CII-CIII region	other
X13956	12S RNA induced by poly(rI), poly(rC) and Newcastle disease virus	other
U07349	Human B lymphocyte serine/threonine protein kinase	signal transduction
D00726	Ferrochelatase	metabolic enz.
M54968	K-ras oncogene	signal transduction
D31661	ERK tyrosine kinase	signal transduction
U21108	Human dual specific protein phosphatase	signal transduction
X52228	Secreted epithelial tumour mucin antigen	signal transduction
X13425	Pancreatic carcinoma marker GA733-1	other
R52511	cDNA clone 39763 similar to Gamma-interferon-inducible protein IP-30 precursor	other
X83425	Lutheran blood group glycoprotein.	cell ad./cell-cell comm.
U13045	Human nuclear respiratory factor-2 subunit beta 1	transcription factor
M20132	Androgen receptor	transcription factor
L07615	Neuropeptide Y receptor Y1	signal transduction
M86699	Human kinase, TTK	signal transduction
R43936	cDNA clone 32974 similar to Serine/threonine-protein kinase STE20	signal transduction
X60787	Transcription factor ILF	signal transduction
X74570	Gal-beta(1-3/1-4)GlcNAc alpha-2,3-sialyltransferase	transcription factor
U30255	Pphosphogluconate dehydrogenase	metabolic enz.
D11466	For Pig N-acetylglucosaminyl-phosphatidylinositol	metabolic enz.
M64347	Novel growth factor receptor	other
R43064	cDNA clone 32719 similar to E2 protein	signal transduction
M60724	p70 ribosomal S6 kinase alpha-1	transcription/replication
U34074	A kinase anchor protein S-AKAP84	translational mach.
H87205	cDNA clone 220505 similar to cell division protein kinase 5	mitochondrial
X57348	cDNA clone 9112 similar to H.sapiens mRNA	cell-cycle
X07696	Keratin, type I cytoskeletal 15	other
X13482	U2 small nuclear ribonucleoprotein A'	structural/cytoskeletal translational mach.

FIG. 10F

	<u>Nominal copy number: 1-10 copies/cell</u>	
D63879	Human mRNA for ORF (KIAA0196)	other
M90656	Gamma-glutamylcysteine synthetase (GCS)	metabolic enz.
H13822	cDNA clone 148291 similar to Zinc finger autosomal protein	other
X83928	Transcription factor TFIIID subunit TAFII28	transcriptional mach.
H52655	cDNA clone 235891 similar to DNA polymerase beta	DNA replication
R42095	Tyrosine kinase SEK receptor precursor	signal transduction
D13633	Human mRNA for ORF (KIAA008)	other
U13616	Human ankyrin G	other
M74558	SIL mRNA	other
X63468	Transcription factor TFII E alpha	transcriptional mach.
M30704	Amphiregulin	other
U11700	Copper transporting ATPase	metabolic enz.
H78807	cDNA clone 230127 similar to D-beta-hydroxybutyrate dehydrogenase precursor	metabolic enz.
M58411	p80-coilin	translational mach.
U25975	Serine kinase, hPAK65	signal transduction
R42898	cDNA clone 32410 similar to JNK activating kinase 1	signal transduction
J03258	Vitamin D3 receptor	signal transduction

FIG. 10G

Genes transcriptionally repressed in BT-474 vs HT-125		
<u>Accession</u>	<u>Nominal copy number: 500-1,000 copies/cell</u>	<u>Functional category</u>
H41129	cDNA clone 175539 similar to Galectin-1	cell ad./cell-cell comm.
T51261	cDNA clone 70133 similar to GliA derived nexin precursor	protein process.
<u>Nominal copy number: 100-500 copies/cell</u>		
R91912	Placental calcium-binding protein	other
M77349	Transforming growth factor-beta induced gene product	other
M35878	Clone HL 1006d similar to IGFBP3	other
T92451	cDNA clone 118219 similar to Tropomyosin	structural/cytoskeletal
M95787	Smooth muscle protein 22-alpha	structural/cytoskeletal
J03210	Collagenase type IV mRNA, 3' end.	ECM
L16895	Human lysyl oxidase	cell ad./cell-cell comm.
X57351	Interferon-inducible protein 1-8D	other
T99774	cDNA clone 122884 similar to Follistatin precursor	cell ad./cell-cell comm.
J03464	Clone pHcol2A1 similar to Procollagen alpha 2(I)chain precursor	ECM
T61333	cDNA clone 78034 similar to Metalloproteinase inhibitor 3 precursor	protein process.
X78947	Connective tissue growth factor	secre. gr. fact.
R49855	cDNA clone 152637 similar to Coagulation factor V precursor	other
T54767	cDNA clone 73802 similar to Sparc precursor	cell ad./cell-cell comm.
L01131	Human decorin	cell ad./cell-cell comm.
L16510	Cathepsin B	protein process.
H87343	cDNA clone 252394 similar to Protein-lysine 6-oxidase precursor	protein process.
M69066	Moesin	structural/cytoskeletal
X91911	RTVP-1	other
T95046	cDNA clone 120085 similar to Protease do precursor	protein process.
X15882	Collagen VI alpha-2 C-terminal globular domain.	structural/cytoskeletal
M69054	IGFBP6	other
X55740	Placental cDNA coding for 5' nucleotidase	metabolic enz.
H80342	cDNA clone 241122 similar to Tubulin beta chain	structural/cytoskeletal
U21090	DNA polymerase delta	DNA replication
Z18951	Caveolin-1	signal transduction

FIG. 10H

	<u>Nominal copy number: 50-100 copies/cell</u>	
U39050	Human mitogen-responsive phosphoprotein	other
H62466	cDNA clone 209654 similar to Collagen alpha 3(VI) chain	structural/cytoskeletal
X14787	Thrombospondin	cell ad./cell-cell comm.
H45474	cDNA clone 183508 similar to Peripheral myelin protein 22	signal transduction
H29761	cDNA clone 186308 similar to Annexin I	cell ad./cell-cell comm.
M11718	Alpha-2 type V collagen	structural/cytoskeletal
X12369	Tropomyosin alpha chain, smooth muscle	structural/cytoskeletal
T54317	cDNA clone 69040 similar to RAS-related protein	signal transduction
U20280	Cathepsin X	protein process.
H23235	cDNA clone 52096 similar to APDGR precursor	signal transduction
R67072	cDNA clone 140763 similar to GAP junction alpha-1 protein	cell ad./cell-cell comm.
R72104	cDNA clone 155771 similar to Bone morphogenetic protein 1 precursor	protein process.
U21128	Lumican	ECM

FIG. 10I

M23419	Initiation factor 5A	translational mach.
L34056	Cadherin-11	signal transduction
M64110	Caldesmon	structural/cytoskeletal
X72012	Endoglin	signal transduction
R70383	cDNA clone 155241 similar to Vitellogenin II precursor	other
T69425	cDNA clone 82963 similar to Alpha-2 macroglobulin precursor	other
H02540	cDNA clone 151270 similar to Cathepsin L precursor	protein process.
X05232	Stromelysin	protein process.
T54278	cDNA clone 69199 similar to Tissue inhibitor of metalloproteinases II precursor	protein process.
M24486	Prolyl 4-hydroxylase alpha subunit	ECM
H80975	cDNA clone 240954 similar to Plasma protease C1 inhibitor precursor	protein process.
H06706	cDNA clone 44616 similar to RAS-related protein ORAB-1	signal transduction
M33210	Colony stimulating factor 1 receptor	signal transduction
T96364	cDNA clone 121066 similar to M-phase inducer phosphatase 3	metabolic enz.

FIG. 10J

	<u>Nominal copy number: 10-50 copies/cell</u>	
J02814	Chondroitin sulfate proteoglycan core protein	cell ad./cell-cell comm.
D14874	Adrenomedullin	other
L35594	Autotaxin	cell ad./cell-cell comm.
R23249	cDNA clone 131100 similar to Preprotein translocase secy subunit	other
L13923	Fibrillin	ECM
T91563	cDNA clone 118372 similar to CD44 antigen, epithelial form precursor	signal transduction
J05017	Aldose reductase	other
M55210	(LAMB 2) gene Laminin B2 chain	ECM
M13755	Interferon-induced 17 KD protein	other
U32114	Caveolin-2	signal transduction
X17097	PSG9	other
X52679	Springomyelin phosphodiesterase	protein process.
Z48481	Membrane-type matrix metalloproteinase 1	protein process.
U24389	Lysyl oxidase-like protein	cell ad./cell-cell comm.
M85289	Heparan sulfate proteoglycan	cell ad./cell-cell comm.
D29992	Placental protein 5	other
Y00711	L-lactate dehydrogenase H chain	other
R50499	Fibrinogen beta chain precursor	cell ad./cell-cell comm.
U09278	Fibroblast activation protein	signal transduction
H15811	cDNA clone 159533 similar to Platelet membrane glycoprotein IIb precursor	cell ad./cell-cell comm.
X82494	Fibulin-2	ECM
H37925	cDNA clone 190993 similar to Interferon-activatable protein 204	other
J02685	Plasminogen activator inhibitor-2	protein process
U03106	Wild-type p53 activated fragment-1, p21WAF1/CIP1	cell-cycle
D13665	Osteoblast specific factor 2	cell ad./cell-cell comm.
T55741	cDNA clone 73645 similar to Myosin light chain kinase	cell ad./cell-cell comm.
U18467	Pregnancy-specific beta 1-glycoprotein 7	other
X06700	Pro-alpha1 (II) collagen	ECM
H56627	cDNA clone 231424 similar to Glutathione S-transferase P	other
T41199	cDNA clone 62328 similar to Laminin gamma-1 chain precursor	ECM
T59895	cDNA clone 76290 similar to Ubiquitin carboxyl-terminal hydrolase isozyme L1	other
T68426	CD81 antigen	cell ad./cell-cell comm.
X13810	OTF-2	transcription factor.
T50086	cDNA clone 70213 similar to Alpha-1-antitrypsinase F precursor	protein process.

FIG. 10K

D28137	Human mRNA for BST-2	cell ad./cell-cell comm.
Z37976	Latent TGF-beta binding protein	other
X02492	Interferon-induced protein 6-16 precursor	other
T66960	cDNA clone 66508 3' similar to Nuclear factor 1 clone PNF1/X	other
H88938	Keratinocyte growth factor precursor	secre. gr. fact.
M29150	Interleukin 6	secre. gr. fact.
X05231	Collagenase	protein process.
X68148	p66shc	signal transduction
D31762	KIAA0057 for ORF	cell-cycle
T61090	cDNA clone 83635 similar to Endoglin precursor	signal transduction
T53889	cDNA clone 78017 similar to Complement C1R component precursor	other
X58288	hR-PTPu gene for protein tyrosine phosphatase	signal transduction
T51913	cDNA clone 72466 similar to Alpha crystallin B chain	other
X17042	Hematopoietic proteoglycan core protein	cell ad./cell-cell comm.
M55621	N-acetylglucosaminyltransferase I	protein process.
H85111	cDNA clone 220183 similar to EBNA-2 nuclear protein	transcription factor
X63613	Pentaxin	other
M24594	Interferon-induced 56 KD protein	other
R36467	cDNA clone 136821 similar to Transforming growth factor beta 1 precursor	secre. gr. fact.
M87503	Transcriptional regulator ISGF3 gamma subunit	transcription factor
X13097	Tissue type plasminogen activator	cell ad./cell-cell comm.
X60201	Brain-derived neurotrophic factor	other
M63509	Human glutathione transferase M2	other
M92642	Alpha-1 type XVI collagen	ECM
M80469	MHC class I HLA-J	other

FIG. 10L

T60855	cDNA clone 76721 similar to Calcineurin B subunit isoform 1	signal transduction
X16707	Fra-1	transcription factor
H54425	cDNA 203126 similar to Metallothionein-II	other
L04733	Kinesin light chain	structural/cytoskeletal
R46493	cDNA clone 36200 similar to Tissue factor precursor	ECM
M29696	Interleukin-7 receptor alpha chain precursor	signal transduction
T97948	cDNA clone 121916 similar to Calponin H2, smooth muscle	structural/cytoskeletal
R43953	cDNA clone 33191 similar to Opioid binding protein	cell ad./cell-cell comm.
R16659	cDNA clone 129622 similar to Tissue factor pathway inhibitor	cell ad./cell-cell comm.
U37019	Smooth muscle cell calponin	structural/cytoskeletal
M96322	Gravin	cell ad./cell-cell comm.
T78624	cDNA clone 113518 similar to Carbonyl reductase	other
M60974	GADD45	cell-cycle
X60708	pCHDP7	protein process.
M62424	Thrombin receptor precursor	signal transduction
R94513	cDNA clone 197667 similar to STAT2	signal transduction
V00523	HLA-DR alpha	other
H65605	cDNA clone 209780 similar to Prothrombin precursor	signal transduction
X76488	Lysosomal acid lipase	protein process.
R12676	cDNA clone 129303 similar to Complement factor H-like protein 1 precursor	other
X06985	Heme oxygenase	metabolic enz.
R60908	cDNA clone 42188 similar to protein-tyrosine kinase	signal transduction
U25779	Human chromosome 17q21 mRNA clone 694.2	other
X12496	Erythrocyte membrane sialoglycoprotein beta	other
T71207	cDNA clone 110162 similar to RAS-related C3 Botulinum toxin substrate 2	signal transduction

FIG. 10M

R52961	cDNA clone 40303 similar to Shc transforming protein 46.8 KD and 51.7 KD precursor	signal transduction
M97676	Homeobox protein	transcription factor
R95874	cDNA clone 199264 similar to LTR5 Retrovirus-related ENV polyprotein	other
T86469	cDNA 114641 similar to Collagen alpha 3(VI) chain	ECM
R48243	cDNA clone 153769 similar to RAS-related protein RHA1	signal transduction
U19969	Two-handed zinc finger protein ZEB	transcription factor
<u>Nominal copy number: 1-10 copies/cell</u>		
R99935	cDNA clone 201757 similar to DNA-directed RNA pol I largest subunit	transcription mach.
T64142	cDNA clone 80145 similar to Proteolipid protein PPA1	protein process.
H74007	cDNA clone 232946 similar to Serine/threonine-protein kinase SGK	signal transduction
H47650	PTS system, sucrose-spec. IIABC component	other
J04080	Complement component C1r	other
D90226	OSF-1	secre. gr. fact.
X03348	Human mRNA for beta-glucocorticoid receptor	signal transduction
R32804	cDNA clone 135146 similar to Glucose transporter type 3	other
M60618	Nuclear autoantigen SP-100	other
L13463	Human helix-loop-helix basic phosphoprotein	other
M26683	Human interferon gamma treatment inducible mRNA.	other
M63838	Interferon-gamma induced protein	other
X73608	Testican	cell ad./cell-cell comm.
M88338	Serum protein MSE55	other
T52698	cDNA clone 67233 similar to Protein-tyrosine phosphatase 1B	protein process.
U16307	Glioma pathogenesis-related protein	other
R35976	cDNA clone 137079 similar to CD30 ligand	signal transduction
X16665	HOX2H	transcription factor
R42244	cDNA clone 30543 similar to Antigen peptide transporter 1	protein process
U19718	Human microfibril-associated glycoprotein	ECM
T85165	cDNA clone 111345 similar to SRC substrate P80/85 proteins	signal transduction
R45687	Cyclin G	cell-cycle
L22473	Bax	cell-cycle

Message quantities are expressed as nominal copy number per cell relative to hybridization intensities of known copy number spiked controls.

Abbreviations: secre. gr. fact., secreted growth factor; ad., adhesion; comm., communication; mach., machinery; enz., enzyme; process., processing; ECM, extracellular matrix.